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Product Data Sheet
00813-0100-4101, Rev DA
April 2010

Rosemount 2051 Pressure Transmitter

- *Reference Accuracy of 0.075%*
- *Rangeability of 100:1*
- *Protocols available include 4-20 mA HART®, FOUNDATION™ fieldbus, 1-5 Vdc HART Low Power*
- *Coplanar™ platform enables integration of primary elements, manifolds, and remote seal solutions*
- *Complete pressure transmitter family to meet your pressure, level, and flow needs*

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Measure Pressure with Confidence

Confidence Begins with Reliable Measurement

The 2051 capabilities are designed to meet a wide range of applications. Combining 0.075% reference accuracy, 100:1 rangedown, and extended two-year stability provides confidence in your pressure measurements.

Integrate With Any Host

The 2051 is available in 4-20mA HART, 1-5 Vdc HART Low Power, or FOUNDATION fieldbus output protocols. Easily integrate the 2051 into existing or new installations.

Reduce Engineering and Installed Cost with Flexible Coplanar Design

The versatile Coplanar platform design enables the best process connection for pressure, flow, and level applications. The final 2051 assembly arrives factory calibrated, pressure-tested, and ready to install. The flexible design reduces engineering and inventory costs.

Meet Your Application Needs with a Complete Offering

The 2051 family of pressure transmitters offers differential, gage, and absolute pressure measurements. The complete offering ensures the 2051 meets your measurement needs.

Rosemount Pressure Solutions

Rosemount 3051S Series of Instrumentation
Highest performing scalable pressure, flow and level measurement solutions drive better plant efficiency and more productivity. Innovative features include wireless, advanced diagnostics, and multivariable technologies.

Rosemount 3095 Mass Flow Transmitter
Accurately measures differential pressure, static pressure and process temperature to dynamically calculate fully compensated mass flow.

Rosemount 3051 Pressure Transmitter Family
Proven industry standard performance and reliability to increase plant profitability. Includes the most comprehensive offering to meet all application needs.

Rosemount 305, 306 and 304 Manifolds
Factory-assembled, calibrated and seal-tested transmitter-to-manifold assemblies reduce installation costs.

Rosemount 1199 Remote Seals
Provides reliable, remote measurements of process pressure and protects the transmitter from hot, corrosive, or viscous fluids.

Orifice Plate Primary Element Systems: Rosemount 1495 and 1595 Orifice Plates, 1496 Flange Unions and 1497 Meter Sections
A comprehensive offering of orifice plates, flange unions and meter sections that are easy to specify and order. The 1595 Conditioning Orifice provides superior performance in tight fit applications.

Annubar® Flowmeter Series: Rosemount 3051SFA ProBar®, 3095MFA Mass ProBar, and 485
The state-of-the-art, fifth generation Rosemount 485 Annubar combined with the 3051S or 3095 MultiVariable transmitter creates an accurate, repeatable and dependable insertion-type flowmeter.

Compact Orifice Flowmeter Series: Rosemount 3051SFC, 3095MFC, and 405
Compact Orifice Flowmeters can be installed between existing flanges, up to a Class 600 (PN100) rating. In tight fit applications, a conditioning orifice plate version is available, requiring only two diameters of straight run upstream and two downstream.

ProPlate® Flowmeter Series: Rosemount 3051SFP ProPlate, 3095MFP Mass ProPlate, and 1195
These integral orifice flowmeters eliminate the inaccuracies that become more pronounced in small orifice line installations. The completely assembled, ready to install flowmeters reduce cost and simplify installation.

Product Offering

Rosemount 2051C Differential and Gage

See ordering information on page 26.

- Performance of 0.075% accuracy, optional 0.065%
- Two-year stability of 0.10%, optional five-year stability
- Coplanar platform enables integrated manifold, primary element and remote seal solutions
- Calibrated spans/ranges from 0.5 inH_2O to 2000 psi (1,2 mbar to 138 bar)
- 316L SST, Alloy C-276 and tantalum process wetted parts

Rosemount 2051T Gage and Absolute

See ordering information on page 31.

- Performance of 0.075% accuracy, optional 0.065%
- Two-year stability of 0.10%, optional five-year stability
- Calibrated spans/ranges from 0.3 to 10000 psi (10,3 mbar to 689 bar)
- Multiple process connections available
- 316L SST and Alloy C-276 process wetted parts

Rosemount 2051L Liquid Level

See ordering information on page 35.

- Performance of 0.075% accuracy
- Welded fill fluid system provides best-in-class system reliability
- Flush and extended diaphragms
- Multiple fill fluids and process wetted materials available

Specifications

PERFORMANCE SPECIFICATIONS

For zero based spans, reference conditions, silicone oil fill, SST materials, Coplanar flange (2051C) or $^1/_2$ in. - 14 NPT (2051T) process connections, digital trim values set to equal range points. Applicable to 4-20 mA HART output only unless otherwise noted.

Conformance To Specification (±3σ (Sigma))

Technology leadership, advanced manufacturing techniques and statistical process control ensure specification conformance to at least ±3σ.

Reference Accuracy(1)

Models(1)	Standard	Performance Option, P8	
2051C			
Ranges 2-5	±0.075% of span For spans less than 10:1, accuracy = $\pm\left[0.025 + 0.005\left(\frac{URL}{Span}\right)\right]$% of Span	Ranges 2-5	High Accuracy Option, P8 ±0.065% of span For spans less than 10:1, accuracy = $\pm\left[0.015 + 0.005\left(\frac{URL}{Span}\right)\right]$% of Span
Range 1	±0.10% of span For spans less than 15:1, accuracy = $\pm\left[0.025 + 0.005\left(\frac{URL}{Span}\right)\right]$% of Span		
2051T			
Ranges 1-4	±0.075% of span For spans less than 10:1, accuracy = $\pm\left[0.0075\left(\frac{URL}{Span}\right)\right]$% of Span	Ranges 1-4	High Accuracy Option, P8 ±0.065% of span For spans less than 10:1, accuracy = $\pm\left[0.0075\left(\frac{URL}{Span}\right)\right]$% of Span
Range 5	±0.075% of span for spans greater than 5:1		
2051L			
Ranges 2-4	±0.075% of span For spans less than 10:1, accuracy = $\pm\left[0.025 + 0.005\left(\frac{URL}{Span}\right)\right]$% of Span		

(1) For FOUNDATION fieldbus transmitters, use calibrated range in place of span.

Long Term Stability

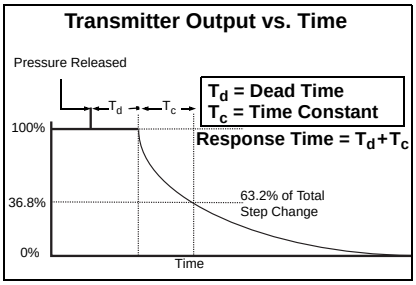
Models	Standard	Performance Option, P8
2051CD, CG		
Range 1 (CD)	±0.2% of URL for 1 year, Reference Stability	
Ranges 2-5	±0.1% of URL for 2 years, Operating Stability	±0.125% of URL for 5 years, Operating Stability
2051T		
Ranges 1-5	±0.1% of URL for 2 years, Operating Stability	±0.125% of URL for 5 years, Operating Stability
2051L		
Ranges 2-4	Not Specified	

Dynamic Performance

	4-20 mA HART[1] 1-5 Vdc HART Low Power	Fieldbus[3]
Total Response Time (T_d + T_c)[2]:		
2051C, Range 3-5:	115 milliseconds	152 milliseconds
Range 1:	270 milliseconds	307 milliseconds
Range 2:	130 milliseconds	152 milliseconds
2051T:	100 milliseconds	152 milliseconds
2051L:	See *Instrument Toolkit*®	See *Instrument Toolkit*
Dead Time (Td)	60 milliseconds (nominal)	97 milliseconds
Update Rate	22 times per second	22 times per second

(1) Dead time and update rate apply to all models and ranges; analog output only
(2) Nominal total response time at 75 °F (24 °C) reference conditions.
(3) Transmitter fieldbus output only, segment macro-cycle not included.

Typical HART Transmitter Response Time



Line Pressure Effect per 1000 psi (6,9 MPa)

For line pressures above 2000 psi (13,7 MPa) and Ranges 4-5, see user manual (Rosemount publication number 00809-0100-4101).

Models	Line Pressure Effect
2051CD	Zero Error[1]
Ranges 2-3	±0.1% of URL/1000 psi (68,9 bar) for line pressures from 0 to 2000 psi (0 to 13,7 MPa)
Range 1	±0.5% of URL/1000 psi (68,9 bar)
	Span Error
Ranges 2-3	±0.1% of reading/1000 psi (68,9 bar)
Range 1	±0.4% of reading/1000 psi (68,9 bar)

(1) Can be calibrated out at line pressure.

Ambient Temperature Effect per 50°F (28°C)

Models	Ambient Temperature Effect
2051C	
Ranges 2-5	±(0.025% URL + 0.125% span) from 1:1 to 5:1 ±(0.05% URL + 0.25% span) from 5:1 to 100:1
Range 1	±(0.2% URL + 0.5% span) from 1:1 to 50:1
2051T	
Range 2-4	±(0.05% URL + 0.25% span) from 1:1 to 30:1 ±(0.07% URL + 0.25% span) from 30:1 to 100:1
Range 1	±(0.05% URL + 0.25% span) from 1:1 to 10:1 ±(0.10% URL + 0.25% span) from 10:1 to 100:1
Range 5	±(0.2% URL + 0.3% span)
2051L	See *Instrument Toolkit*

Mounting Position Effects

Models	Mounting Position Effects
2051C	Zero shifts up to ±1.25 inH_2O (3,1 mbar), which can be calibrated out. No span effect.
2051T	Zero shifts up to ±2.5 inH_2O (6,2 mbar), which can be calibrated out. No span effect.
2051L	With liquid level diaphragm in vertical plane, zero shift of up to 1 inH_2O (2,49 mbar). With diaphragm in horizontal plane, zero shift of up to 5 inH_2O (12,43 mbar) plus extension length on extended units. Zero shifts can be calibrated out. No span effect.

Vibration Effect

Less than ±0.1% of URL when tested per the requirements of IEC60770-1 field or pipeline with high vibration level (10-60 Hz 0.21mm displacement peak amplitude / 60-2000 Hz 3g).

Power Supply Effect

Less than ±0.005% of calibrated span per volt.

Electromagnetic Compatibility (EMC)

Meets all relevant requirements of EN 61326 and NAMUR NE-21.

Transient Protection (Option Code T1)

Meets IEEE C62.41, Category Location B

6 kV crest (0.5 μs - 100 kHz)
3 kV crest (8 × 20 microseconds)
6 kV crest (1.2 × 50 microseconds)

FUNCTIONAL SPECIFICATIONS

Range and Sensor Limits

Range	2051CD, 2051CG, 2051L					
		Range and Sensor Limits				
			Lower (LRL)			
	Minimum Span	Upper (URL)	2051C Differential	2051C Gage(1)	2051L Differential	2051L Gage(1)
1	0.5 inH_2O (1,2 mbar)	25 inH_2O (62,3 mbar)	–25 inH_2O (–62,1 mbar)	–25 inH_2O (–62,1 mbar)	N/A	N/A
2	2.5 inH_2O (6,2 mbar)	250 inH_2O (0,62 bar)	–250 inH_2O (–0,62 bar)	–250 inH_2O (–0,62 bar)	–250 inH_2O (–0,62 bar)	–250 inH_2O (–0,62 bar)
3	10 inH_2O (24,9 mbar)	1000 inH_2O (2,49 bar)	-1000 inH_2O (-2,49 bar)	–393 inH_2O (–979 mbar)	–1000 inH_2O (–2,49 bar)	–393 inH_2O (–979 mbar)
4	3 psi (0,207 bar)	300 psi (20,6 bar)	-300 psi (-20,6 bar)	–14.2 psig (–979 mbar)	–300 psi (–20,7 bar)	–14.2 psig (–979 mbar)
5	20 psi (1,38 bar)	2000 psi (137,9 bar)	-2000 psi (-137,9 bar)	–14.2 psig (–979 mbar)	N/A	N/A

(1) Assumes atmospheric pressure of 14.7 psig.

Range	2051T			
		Range and Sensor Limits		
	Minimum Span	Upper (URL)	Lower (LRL) (Abs)	Lower(1) (LRL) (Gage)
1	0.3 psi (20,6 mbar)	30 psi (2,06 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)
2	1.5 psi (0,103 bar)	150 psi (10,3 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)
3	8 psi (0,55 bar)	800 psi (55,2 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)
4	40 psi (2,76 bar)	4000 psi (275,8 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)
5	2000 psi (137,9 bar)	10000 psi (689,4 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)

(1) Assumes atmospheric pressure of 14.7 psig.

Service

Liquid, gas, and vapor applications

Protocols

4–20 mA HART (Output Code A)

Output

Two-wire 4–20 mA, user-selectable for linear or square root output. Digital process variable superimposed on 4–20 mA signal, available to any host that conforms to the *HART* protocol.

Power Supply

External power supply required. Standard transmitter operates on 10.5 to 42.4 V dc with no load.

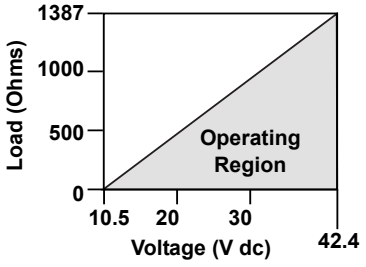
Turn-On Time

Performance within specifications less than 2.0 seconds after power is applied to the transmitter.

Load Limitations

Maximum loop resistance is determined by the voltage level of the external power supply, as described by:

Maximum Loop Resistance = 43.5 * (Power Supply Voltage – 10.5)



The HART communicator requires a minimum loop resistance of 250Ω for communication.

FOUNDATION fieldbus (Output Code F)

Power Supply

External power supply required; transmitters operate on 9.0 to 32.0 V dc transmitter terminal voltage.

Current Draw

17.5 mA for all configurations (including LCD display option)

Turn-On Time

Performance within specifications less than 20.0 seconds after power is applied to the transmitter.

FOUNDATION fieldbus Function Block Execution Times

Block	Execution Time
Resource	-
Transducer	-
LCD Block	-
Analog Input 1, 2	30 milliseconds
PID	45 milliseconds

FOUNDATION fieldbus Parameters

Schedule Entries	7 (max.)
Links	20 (max.)
Virtual Communications Relationships (VCR)	12 (max.)

Standard Function Blocks

Resource Block

- Contains hardware, electronics, and diagnostic information.

Transducer Block

- Contains actual sensor measurement data including the sensor diagnostics and the ability to trim the pressure sensor or recall factory defaults.

LCD Block

- Configures the local display.

2 Analog Input Blocks

- Processes the measurements for input into other function blocks. The output value is in engineering units or custom and contains a status indicating measurement quality.

PID Block

Contains all logic to perform PID control in the field including cascade and feedforward.

Backup Link Active Scheduler (LAS)

The transmitter can function as a Link Active Scheduler if the current link master device fails or is removed from the segment.

1-5 Vdc HART Low Power (Output Code M)

Output

Three wire 1–5 Vdc output, user-selectable for linear or square root output. Digital process variable superimposed on voltage signal, available to any host conforming to the *HART* protocol.

Power Supply

External power supply required. Standard transmitter operates on 9 to 28 Vdc with no load.

Power Consumption

3.0 mA, 27–84 mW

Output Load

100 kΩ or greater

Turn-On Time

Performance within specifications less than 2.0 seconds after power is applied to the transmitter.

Overpressure Limits

Transmitters withstand the following limits without damage:

2051C

- Ranges 2–5: 3626 psig (250 bar)
  4500 psig (310,3 bar) for option code P9
- Range 1: 2000 psig (137,9 bar)

2051T

- Range 1: 750 psi (51,7 bar)
- Range 2: 1500 psi (103,4 bar)
- Range 3: 1600 psi (110,3 bar)
- Range 4: 6000 psi (413,7 bar)
- Range 5: 15000 psi (1034,2 bar)

2051L

Limit is flange rating or sensor rating, whichever is lower (see Table 1).

Table 1. 2051L Flange Rating

Standard	Type	CS Rating	SST Rating
ANSI/ASME	Class 150	285 psig	275 psig
ANSI/ASME	Class 300	740 psig	720 psig
At 100 °F (38 °C), the rating decreases with increasing temperature, per ANSI/ASME B16.5.			
DIN	PN 10–40	40 bar	40 bar
DIN	PN 10/16	16 bar	16 bar
At 248 °F (120 °C), the rating decreases with increasing temperature, per DIN 2401.			

Static Pressure Limit

2051CD

- Operates within specifications between static line pressures of -14.2 psig (0.034 bar) and 3626 psig (250 bar)
  - For Option Code P9, 4500 psig (310,3 bar)
- Range 1: 0.5 psia to 2000 psig (34 mbar and 137,9 bar)

Burst Pressure Limits

2051C Coplanar or traditional process flange

- 10000 psig (689,5 bar)

2051T

- Ranges 1–4: 11000 psi (758,4 bar)
- Range 5: 26000 psi (1792,64 bar)

Temperature Limits

Ambient(1)

–40 to 185 °F (–40 to 85 °C)

With LCD display(2): –40 to 175 °F (–40 to 80 °C)

Storage(1)

–50 to 230 °F (–46 to 110 °C)

With LCD display: –40 to 185 °F (–40 to 85 °C)

(1) Limits for silicone fill fluid only.

(2) LCD display may not be readable and LCD updates will be slower at temperatures below -4 °F (-20 °C).

Process Temperature Limits

At atmospheric pressures and above.

Table 2. 2051 Process Temperature Limits

2051C	
Silicone Fill Sensor(1)	
with Coplanar Flange	–40 to 250 °F (–40 to 121 °C)(2)
with Traditional Flange	–40 to 300 °F (–40 to 149 °C)(2)
with Level Flange	–40 to 300 °F (–40 to 149 °C)(2)
with 305 Integral Manifold	–40 to 300 °F (–40 to 149 °C)(2)
Inert Fill Sensor(1)	–40 to 185 °F (–40 to 85 °C)(3)
2051T (Process Fill Fluid)	
Silicone Fill Sensor(1)	–40 to 250 °F (–40 to 121 °C)(2)
Inert Fill Sensor(1)	–22 to 250 °F (–30 to 121 °C)(2)
2051L Low-Side Temperature Limits	
Silicone Fill Sensor(1)	–40 to 250 °F (–40 to 121 °C)(2)
Inert Fill Sensor(1)	0 to 185 °F (–18 to 85 °C)(2)
2051L High-Side Temperature Limits (Process Fill Fluid)	
Syltherm® XLT	–102 to 293 °F (–75 to 145 °C)
D.C. Silicone 704®	32 to 599 °F (0 to 315 °C)
D.C. Silicone 200	–49 to 401 °F(–45 to 205 °C)
Inert	–49 to 320 °F(–45 to 160 °C)
Glycerin and Water	5 to 203 °F (-15 to 95 °C)
Neobee M-20	5 to 437 °F (-15 to 225 °C)
Propylene Glycol and Water	5 to 203 °F (-15 to 95 °C)

(1) Process temperatures above 185 °F (85 °C) require derating the ambient limits by a 1.5:1 ratio.

(2) 220 °F (104 °C) limit in vacuum service; 130 °F (54 °C) for pressures below 0.5 psia.

(3) 160 °F (71 °C) limit in vacuum service.

Humidity Limits

0–100% relative humidity

Volumetric Displacement

Less than 0.005 in^3 (0,08 cm^3)

Damping

Analog output response to a step input change is user-selectable from 0 to 25.6 seconds for one time constant. This software damping is in addition to sensor module response time.

Failure Mode Alarm

If self-diagnostics detect a sensor or microprocessor failure, the analog signal is driven either high or low to alert the user. High or low failure mode is user-selectable with a jumper on the transmitter. The values to which the transmitter drives its output in failure mode depend on whether it is factory-configured to *standard* or *NAMUR-compliant* operation. The values for each are as follows:

Standard Operation			
Output Code	**Linear Output**	**Fail High**	**Fail Low**
A	3.9 ≤ I ≤ 20.8	I ≥ 21.75 mA	I ≤ 3.75 mA
M	0.97 ≤ V ≤ 5.2	V ≥ 5.4 V	V ≤ 0.95V

NAMUR-Compliant Operation			
Output Code	**Linear Output**	**Fail High**	**Fail Low**
A	3.8 ≤ I ≤ 20.5	I ≥ 22.5 mA	I ≤ 3.6 mA

Output Code F

If self-diagnostics detect a gross transmitter failure, that information gets passed as a status along with the process variable.

PHYSICAL SPECIFICATIONS

Electrical Connections

1/2–14 NPT, G1/2, and M20 × 1.5 (CM20) conduit.

Process Connections

2051C

- 1/4–18 NPT on 2 1/8-in. centers
- 1/2–14 NPT and RC 1/2 on 2-in.(50.8mm), 2 1/8-in. (54.0 mm), or 2 1/4-in. (57.2mm) centers (process adapters)

2051T

- 1/2–14 NPT female
- G1/2 A DIN 16288 Male (available in SST for Range 1–4 transmitters only)
- Autoclave type F-250-C (Pressure relieved 9/16–18 gland thread; 1/4 OD high pressure tube 60° cone; available in SST for Range 5 transmitters only)

2051L

- High pressure side: 2-in.(50.8mm), 3-in. (72 mm), or 4-in. (102mm), ASME B 16.5 (ANSI) Class 150 or 300 flange; 50, 80 or 100 mm, DIN 2501 PN 40 or 10/16 flange
- Low pressure side: 1/4–18 NPT on flange, 1/2–14 NPT on process adapter

2051C Process Wetted Parts

Drain/Vent Valves

316 SST or Alloy C-276

Process Flanges and Adapters

Plated carbon steel, SST CF-8M (cast version of 316 SST, material per ASTM-A743), or CW12MW (cast version of Alloy C-276)

Wetted O-rings

Glass-filled PTFE or Graphite-filled PTFE

Process Isolating Diaphragms

316L SST, Alloy C-276, or Tantalum

2051T Process Wetted Parts

Process Connections

- 316L SST or Alloy C-276

Process Isolating Diaphragms

- 316L SST or Alloy C-276

2051L Process Wetted Parts

Flanged Process Connection (Transmitter High Side)

Process Diaphragms, Including Process Gasket Surface

- 316L SST, Alloy C-276, or Tantalum

Extension

- CF-3M (Cast version of 316L SST, material per ASTM-A743), or Cast C-276. Fits schedule 40 and 80 pipe.

Mounting Flange

- Zinc-cobalt plated CS or SST

Reference Process Connection (Transmitter Low Side)

Isolating Diaphragms

- 316L SST or Alloy C-276

Reference Flange and Adapter

- CF-8M (Cast version of 316 SST, material per ASTM-A743)

Non-Wetted Parts for 2051C/T/L

Electronics Housing

Low-copper aluminum or CF-8M (Cast version of 316 SST).
Enclosure Type 4X, IP 65, IP 66, IP68

Coplanar Sensor Module Housing

CF-3M (Cast version of 316L SST)

Bolts

ASTM A449, Type 1 (zinc-cobalt plated carbon steel)
ASTM F593G, Condition CW1 (Austenitic 316 SST)
ASTM A193, Grade B7M (zinc plated alloy steel)

Sensor Module Fill Fluid

Silicone oil (D.C. 200) or Fluorocarbon oil (Halocarbon or Fluorinert® FC-43 for 2051T)

Process Fill Fluid (2051L only)

Syltherm XLT, D.C. Silicone 704,
D.C. Silicone 200, inert, glycerin and water, Neobee M-20 or propylene glycol and water

Paint

Polyurethane

Cover O-rings

Buna-N

Shipping Weights

Table 3. Transmitter Weights without Options

Transmitter	lb. (kg)
2051C	4.9 (2,2)
2051L	Table 4 below
2051T	3.1 (1,4)

Table 4. 2051L Weights without Options

Flange	Flush lb. (kg)	2-in. Ext. lb (kg)	4-in. Ext. lb (kg)	6-in. Ext. lb (kg)
2-in., 150	12.5 (5,7)	—	—	—
3-in., 150	17.5 (7,9)	19.5 (8,8)	20.5 (9,3)	21.5 (9,7)
4-in., 150	23.5 (10,7)	26.5 (12,0)	28.5 (12,9)	30.5 (13,8)
2-in., 300	17.5 (7,9)	—	—	—
3-in., 300	22.5 (10,2)	24.5 (11,1)	25.5 (11,6)	26.5 (12,0)
4-in., 300	32.5 (14,7)	35.5 (16,1)	37.5 (17,0)	39.5 (17,9)
DN 50/PN 40	13.8 (6,2)	—	—	—
DN 80/PN 40	19.5 (8,8)	21.5 (9,7)	22.5 (10,2)	23.5 (10,6)
DN 100/ PN 10/16	17.8 (8,1)	19.8 (9,0)	20.8 (9,5)	21.8 (9,9)
DN 100/ PN 40	23.2 (10,5)	25.2 (11,5)	26.2 (11,9)	27.2 (12,3)

Table 5. Transmitter Options Weights

Code	Option	Add lb (kg)
J, K, L, M	Stainless Steel Housing	3.9 (1,8)
M5	LCD display for Aluminum Housing	0.5 (0,2)
B4	SST Mounting Bracket for Coplanar Flange	1.0 (0,5)
B1 B2 B3	Mounting Bracket for Traditional Flange	2.3 (1,0)
B7 B8 B9	Mounting Bracket for Traditional Flange	2.3 (1,0)
BA, BC	SST Bracket for Traditional Flange	2.3 (1,0)
H2	Traditional Flange	2.6 (1,2)
H3	Traditional Flange	3.0 (1,4)
H4	Traditional Flange	3.0 (1,4)
H7	Traditional Flange	2.7 (1,2)
FC	Level Flange—3 in., 150	12.7 (5,8)
FD	Level Flange—3 in., 300	15.9 (7,2)
FA	Level Flange—2 in., 150	8.0 (3,6)
FB	Level Flange—2 in., 300	8.4 (3,3)
FP	DIN Level Flange, SST, DN 50, PN 40	7.8 (3,5)
FQ	DIN Level Flange, SST, DN 80, PN 40	12.7 (5,8)

Product Certifications

Approved Manufacturing Locations

Rosemount Inc. — Chanhassen, Minnesota USA
Emerson Process Management GmbH & Co. — Wessling, Germany
Emerson Process Management Asia Pacific Private Limited — Singapore
Beijing Rosemount Far East Instrument Co., LTD — Beijing, China

European Directive Information

The EC declaration of conformity for all applicable European directives for this product can be found on the Rosemount website at www.rosemount.com. A hard copy may be obtained by contacting an Emerson Process Management representative.

ATEX Directive (94/9/EC)

All 2051 transmitters comply with the ATEX Directive.

European Pressure Equipment Directive (PED) (97/23/EC)

2051CG2, 3, 4, 5; 2051CD2, 3, 4, 5 (also with P9 option) — QS Certificate of Assessment - EC No. PED-H-100 Module H Conformity Assessment

All other 2051 Pressure Transmitters

— Sound Engineering Practice

Transmitter Attachments: Diaphragm Seal - Process Flange - Manifold

— Sound Engineering Practice

Electro Magnetic Compatibility (EMC) (2004/108/EC)

All 2051 Pressure Transmitters meet all of the requirements of IECEN61326:2006 and NAMUR NE-21.

Ordinary Location Certification for Factory Mutual

As standard, the transmitter has been examined and tested to determine that the design meets basic electrical, mechanical, and fire protection requirements by FM, a nationally recognized testing laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

HART PROTOCOL

Hazardous Locations Certifications

North American Certifications

FM Approvals

E5 Explosion-Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition-Proof for Class II, Division 1, Groups E, F, and G. Dust-Ignition-Proof for Class III, Division 1.
T5 (Ta = 85 °C), Factory Sealed, Enclosure Type 4X

I5 Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class III, Division 1 when connected per Rosemount drawing 02051-1009; Non-incendive for Class I, Division 2, Groups A, B, C, and D.
Temperature Code:T4 (Ta = 40 °C), T3 (Ta = 85 °C), Enclosure Type 4X
For input parameters see control drawing 02051-1009.

Canadian Standards Association (CSA)

All CSA hazardous approved transmitters are certified per ANSI/ISA 12.27.01-2003.

E6 Explosion-Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition-Proof for Class II and Class III, Division 1, Groups E, F, and G. Suitable for Class I, Division 2 Groups A, B, C, and D for indoor and outdoor hazardous locations. Enclosure type 4X, factory sealed

I6 Intrinsically safe approval. Intrinsically safe for Class I, Division 1, Groups A, B, C, and D when connected in accordance with Rosemount drawing 02051-1008. Temperature Code T3C.
Dust-Ignition-Proof for Class II and Class III, Division 1, Groups E, F, and G. Suitable for Class I, Division 2 Groups A, B, C, and D hazardous locations. Enclosure type 4X, factory sealed
For input parameters see control drawing 02051-1008.

European Certifications

I1 ATEX Intrinsic Safety
Certification No. Baseefa08ATEX0129X ⟨Ex⟩ II 1 G
Ex ia IIC T4 (–60 ≤ T_a ≤ +70 °C)
IP66 IP68
CE 1180

TABLE 6. Input Parameters

U_i = 30V
I_i = 200 mA
P_i = 1.0W
C_i = 0.012 µF
L_i = 10 µH

TABLE 7. RTD Assembly (2051CFx Option T or R)

U_i = 5 Vdc
I_i = 500 mA
P_i = 0.63W

Special Conditions for Safe Use (X):
When the optional transient protection terminal block is installed, the apparatus is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of EN60079-11. This must be taken into account when installing the apparatus.

N1 ATEX Type n
Certification No. Baseefa08ATEX0130X ⟨Ex⟩ II 3 G
Ex nAnL IIC T4 (–40 ≤ T_a ≤ +70 °C)
U_i = 42.4 Vdc max
IP66
CE

Special Conditions for Safe Use (X):
When the optional transient protection terminal block is installed, the apparatus is not capable of withstanding a 500V r.m.s. test to case. This must be taken into account on any installation in which it is used, for example by assuring that the supply to the apparatus is galvanically isolated.

E1 ATEX Flame-Proof
Certification No. KEMA 08ATEX0090X ⟨Ex⟩ II 1/2 G
Ex d IIC T6 (–50 ≤ T_a ≤ 65 °C)
Ex d IIC T5 (–50 ≤ T_a ≤ 80 °C)
IP66
CE 1180
Vmax = 42.4 V dc

Special Conditions for Safe Use (X):
This device contains a thin wall diaphragm. Installation, maintenance, and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

ND ATEX Dust
Certification No. Baseefa08ATEX0182X ⟨Ex⟩ II 1 D
Dust Rating: II 1 D Ex tD A20 T115 °C (-20 °C ≤ T_a ≤ 85 °C)
IP66 IP68
Vmax = 42.4 V dc
A = 22 mA
CE 1180

Special Conditions for Safe Use (X):
If the equipment is fitted with an optional 90V transient suppressor, it is incapable of isolation from earth test and this must be taken into account during installation.

IECEx Certifications

I7 IECEx Intrinsic Safety
Certification No. IECExBAS08.0045X II 1 G
Ex ia IIC T4 (–60 ≤ T_a ≤ +70 °C)
CE 1180

TABLE 8. Input Parameters

U_i = 30V
I_i = 200 mA
P_i = 1.0W
C_i = 0.012 µF

TABLE 9. RTD Assembly (2051CFx Option T or R)

U_i = 5 Vdc
I_i = 500 mA
P_i = 0.63W

Special Conditions for Safe Use (X):
When the optional transient protection terminal block is installed, the apparatus is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of IEC60079-11. This must be taken into account when installing the apparatus.

E7 IECEx Explosion-Proof (Flame-Proof)
Certification No. IECEx KEM 08.0024X II 1/2 G
Ex d IIC T6 (–50 ≤ T_a ≤ 65 °C)
Ex d IIC T5 (–50 ≤ T_a ≤ 80 °C)
CE 1180
Vmax = 42.4 V dc

Special Conditions for Safe Use (X):
This device contains a thin wall diaphragm. Installation, maintenance, and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

N7 IECEx Type n
Certification No. IECExBAS08.0046X II 3 G
Ex nAnL IIC T4 (–40 ≤ T_a ≤ +70 °C)
U_i = 42.4 Vdc max
CE

Special Conditions for Safe Use (X):

When the optional transient protection terminal block is installed, the apparatus is not capable of withstanding a 500V r.m.s. test to case. This must be taken into account on any installation in which it is used, for example by assuring that the supply to the apparatus is galvanically isolated.

TIIS Certifications

E4 TIIS Flame-Proof
Ex d IIC T6

I4 TIIS Intrinsic Safety
Ex ia IIC T4

Inmetro Certifications

E2 Flame-Proof
BR-Ex d IIC T6/T5

I2 Intrinsic Safety
BR-Ex ia IIC T4

GOST - Russia Certifications

IM Intrinsic Safety
Certificate Pending

EM Flame-Proof
Certificate Pending

China (NEPSI) Certifications

E3 Flame-Proof
Ex d II B+H_2T3~T5

I3 Intrinsic Safety
Ex ia IIC T4

CCoE Certifications

IW Intrinsic Safety
Ex ia IIC T4

EW Flame-Proof
Ex d IIC T5 or T6

Combinations of Certifications

Stainless steel certification tag is provided when optional approval is specified. Once a device labeled with multiple approval types is installed, it should not be reinstalled using any other approval types. Permanently mark the approval label to distinguish it from unused approval types.

K1 **E1, I1, N1,** and **ND** combination

K4 **E4** and **I4** combination

K5 **E5** and **I5** combination

K6 **I6** and **E6** combination

K7 **E7, I7,** and **N7** combination

KA **E1, I1, E6,** and **I6** combination

KB **E5, I5, E6,** and **I6** combination

KC **E1, I1, E5,** and **I5** combination

KD **E1, I1, E5, I5, E6,** and **I6** combination

FIELDBUS PROTOCOL

Hazardous Locations Certifications

North American Certifications

FM Approvals

E5 Explosion-Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition-Proof for Class II, Division 1, Groups E, F, and G. Dust-Ignition-Proof for Class III, Division 1.

T5 (Ta = 85 °C), Factory Sealed, Enclosure Type 4X

I5/IE Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class III, Division 1 when connected per Rosemount drawing 02051-1009; Non-incendive for Class I, Division 2, Groups A, B, C, and D.

Temperature Code:T4 (Ta = 40 °C), T3 (Ta = 85 °C), Enclosure Type 4X
For input parameters see control drawing 02051-1009.

Canadian Standards Association (CSA)

All CSA hazardous approved transmitters are certified per ANSI/ISA 12.27.01-2003.

E6 Explosion-Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition-Proof for Class II and Class III, Division 1, Groups E, F, and G. Suitable for Class I, Division 2 Groups A, B, C, and D for indoor and outdoor hazardous locations. Enclosure type 4X, factory sealed

I6/IF Intrinsically safe approval. Intrinsically safe for Class I, Division 1, Groups A, B, C, and D when connected in accordance with Rosemount drawings 02051-1008. Temperature Code T3C.
Dust-Ignition-Proof for Class II and Class III, Division 1, Groups E, F, and G. Suitable for Class I, Division 2 Groups A, B, C, and D hazardous locations. Enclosure type 4X, factory sealed
For input parameters see control drawing 02051-1008.

European Certifications

I1 ATEX Intrinsic Safety
Certification No. Baseefa08ATEX0129X ⟨Ex⟩ II 1 G
Ex ia IIC T4 (T_{amb} = –60 to +60 °C)
IP66
CE 1180

TABLE 10. Input Parameters

U_i = 30V
I_i = 300 mA
P_i = 1.3 W
C_i = 0 µF
L_i = 0 uH

TABLE 11. RTD Assembly (2051CFx Option T or R)

U_i = 5 Vdc
I_i = 500 mA
P_i = 0.63W

Special Conditions for Safe Use (X):
The device is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of EN60079-11. This must be taken into account when installing the apparatus.

IA ATEX FISCO Intrinsic Safety
Certification No. Baseefa08ATEX0129X ⟨Ex⟩ II 1 G
Ex ia IIC T4 (T_{amb} = –60 to +60 °C)
IP66
CE 1180

TABLE 12. Input Parameters

U_i = 17.5 V
I_i = 380 mA
P_i = 5.32 W
C_i = ≤ 5 µF
L_i = ≤ 10 µH

Special Conditions for Safe Use (X):
The device is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of EN60079-11. This must be taken into account when installing the apparatus.

N1 ATEX Type n
Certification No. Baseefa08ATEX0130X ⟨Ex⟩ II 3 G
Ex nAnL IIC T4 (T_{amb} = –40 to +70 °C)
U_i = 32 Vdc max
IP66

Special Conditions for Safe Use (X):
The device is not capable of withstanding the 500V insulation test required by Clause 6.8.1 of EN60079-15. This must be taken into account when installing the apparatus.

E1 ATEX Flame-Proof
Certification No. KEMA 08ATEX0090X ⟨Ex⟩ II 1/2 G
Ex d IIC T6 (T_{amb} = –50 to 65 °C)
Ex d IIC T5 (T_{amb} = –50 to 80 °C)
IP66
CE 1180
Vmax = 32 V dc

Special Conditions for Safe Use (X):
This device contains a thin wall diaphragm. Installation, maintenance, and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

ND ATEX Dust
Certification No. Baseefa08ATEX0182X ⟨Ex⟩ II 1 D
Dust Rating: II 1 D Ex tD A20 T115 °C (-20 °C ≤ T_a ≤ 85 °C)
IP66 IP68
Vmax = 42.4 V dc
A = 22 mA
CE 1180

Special Conditions for Safe Use (X):
If the equipment is fitted with an optional 90V transient suppressor, it is incapable of isolation from earth test and this must be taken into account during installation.

IECEx Certifications

I7 IECEx Intrinsic Safety
Certification No. IECExBAS08.0045X II 1 G
Ex ia IIC T4 (T_{amb} = –60 to +60 °C)
IP66
CE 1180

TABLE 13. Input Parameters

U_i = 30V
I_i = 300 mA
P_i = 1.3 W
C_i = 0 µF

TABLE 14. RTD Assembly (2051CFx Option T or R)

U_i = 5 Vdc
I_i = 500 mA
P_i = 0.63W

Special Conditions for Safe Use (X):
The device is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of IEC60079-11. This must be taken into account when installing the apparatus.

IG ATEX FISCO Intrinsic Safety
Certification No. IECExBAS08.0045X ⟨Ex⟩ II 1 G
Ex ia IIC T4 (T_{amb} = –60 to +60 °C)
IP66
CE 1180

TABLE 15. Input Parameters

U_i = 17.5 V
I_i = 380 mA
P_i = 5.32 W
C_i = ≤ 5 µF
L_i = ≤ 10 µH

Special Conditions for Safe Use (X):
The device is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of EN60079-11. This must be taken into account when installing the apparatus.

E7 IECEx Explosion-Proof (Flame-Proof)
Certification No. IECEx KEM 08.0024X II 1/2 GD
Ex d IIC T6 (T_{amb} = –50 to 65 °C)
Ex d IIC T5 (T_{amb} = –50 to 80 °C)
IP66
CE 1180
Vmax = 32 V dc

Special Conditions for Safe Use (X):
This device contains a thin wall diaphragm. Installation, maintenance, and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

N7 IECEx Type n
Certification No. IECExBAS08.0046X II 3 G
Ex nAnL IIC T4 (T_{amb} = –40 to +70 °C)
U_i = 32 Vdc max

Special Conditions for Safe Use (X):

The device is not capable of withstanding the 500V insulation test required by Clause 6.8.1 of IEC60079-15. This must be taken into account when installing the device.

TIIS Certifications

E4 TIIS Flame-Proof
Ex d IIC T6

I4 TIIS Intrinsic Safety
Ex ia IIC T4

ID TIIS FISCO Intrinsic Safety
Certificate Pending

Inmetro Certifications

E2 Flame-Proof
BR-Ex d IIC T6/T5

I2 Intrinsic Safety
BR-Ex ia IIC T4

IB FISCO Intrinsic Safety
Certificate Pending

GOST - Russia Certifications

IM Intrinsic Safety
Certificate Pending

EM Flame-Proof
Certificate Pending

China (NEPSI) Certifications

E3 Flame-Proof
Ex d II B+H_2T3~T5

I3 Intrinsic Safety
Ex ia IIC T4

CCoE Certifications

IW Intrinsic Safety
Ex ia IIC T4

EW Flame-Proof
Ex d IIC T5 or T6

Combinations of Certifications

Stainless steel certification tag is provided when optional approval is specified. Once a device labeled with multiple approval types is installed, it should not be reinstalled using any other approval types. Permanently mark the approval label to distinguish it from unused approval types.

K1 **E1, I1, N1,** and **ND** combination

K4 **E4** and **I4** combination

K5 **E5** and **I5** combination

K6 **I6** and **E6** combination

K7 **E7, I7,** and **N7** combination

KA **E1, I1, E6,** and **I6** combination

KB **E5, I5, E6,** and **I6** combination

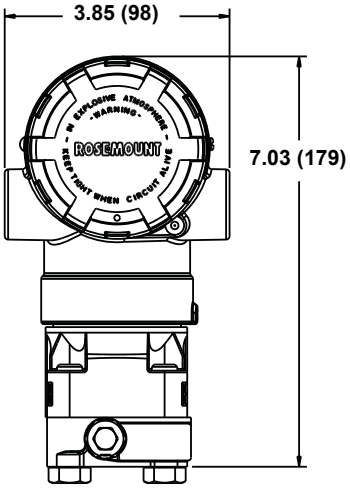
KC **E1, I1, E5,** and **I5** combination

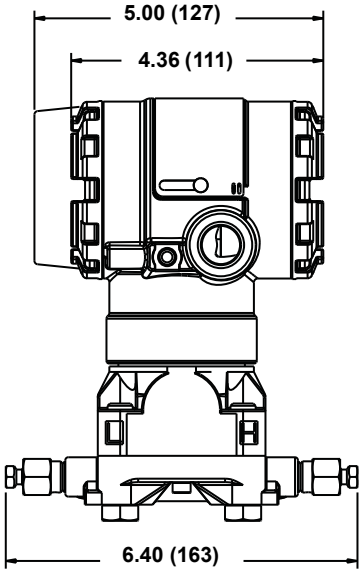
KD **E1, I1, E5, I5, E6,** and **I6** combination

Dimensional Drawings

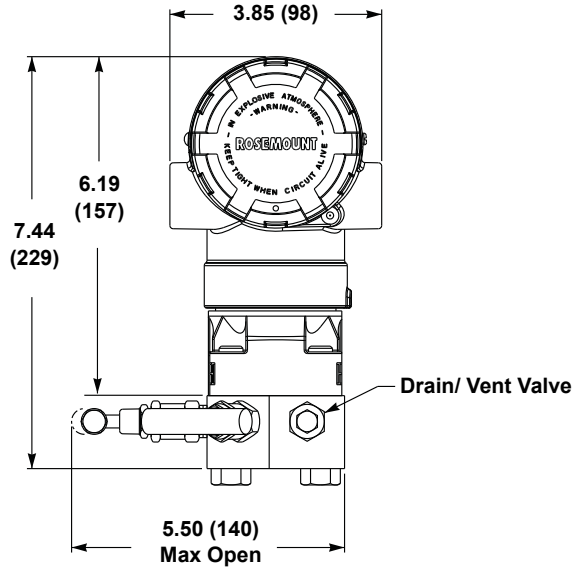
Dimensions are in inches (millimeters).

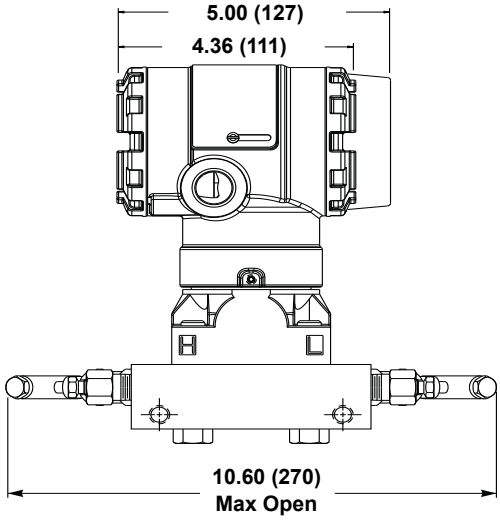
2051C Coplanar Flange Dimensional Drawing





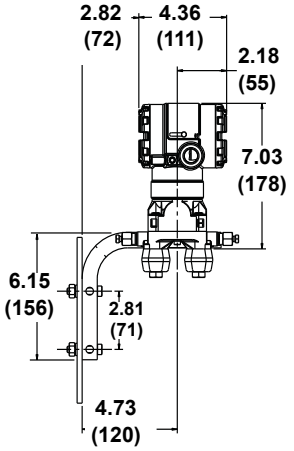
2051C Coplanar with Rosemount 305 Coplanar Integral Manifold

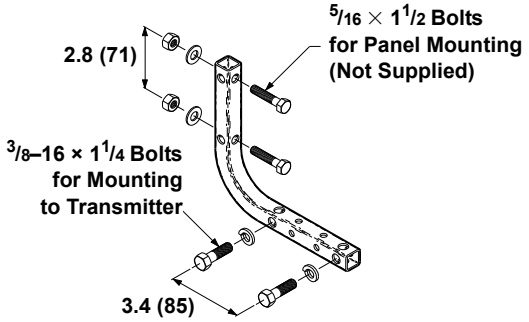




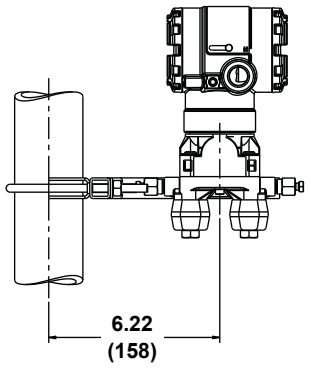
Coplanar Flange Mounting Configurations with Optional Bracket (B4) for 2-in. Pipe or Panel Mounting

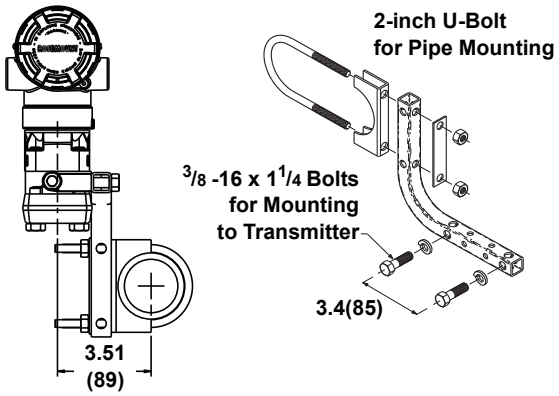
PANEL MOUNTING



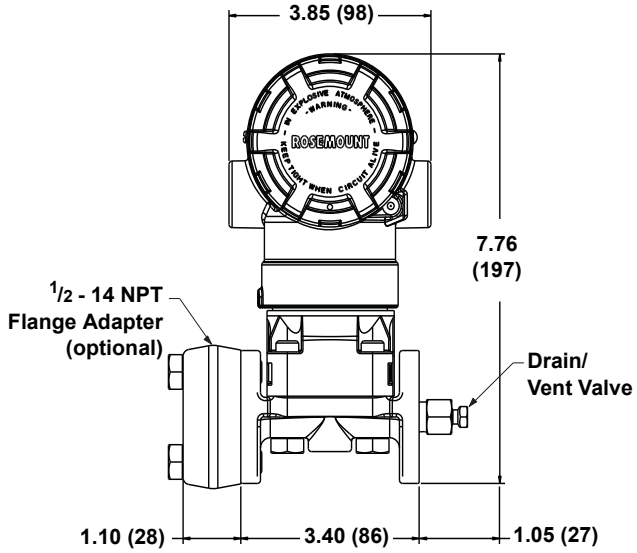


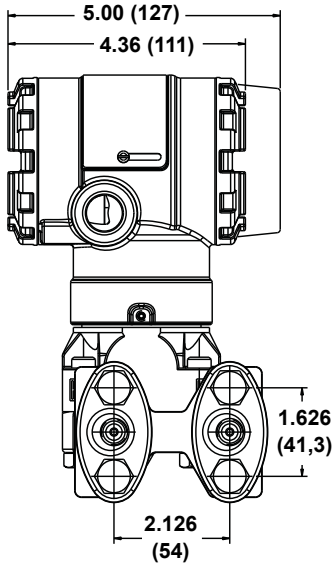
PIPE MOUNTING



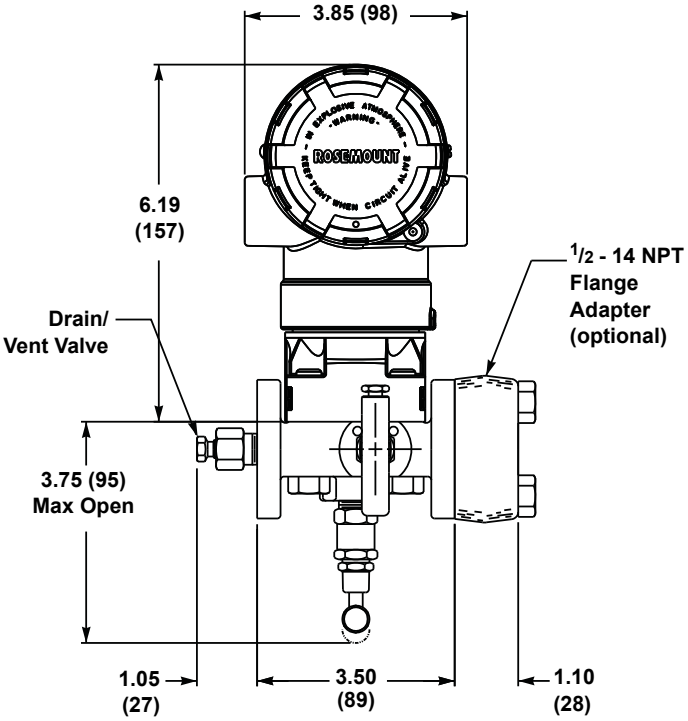


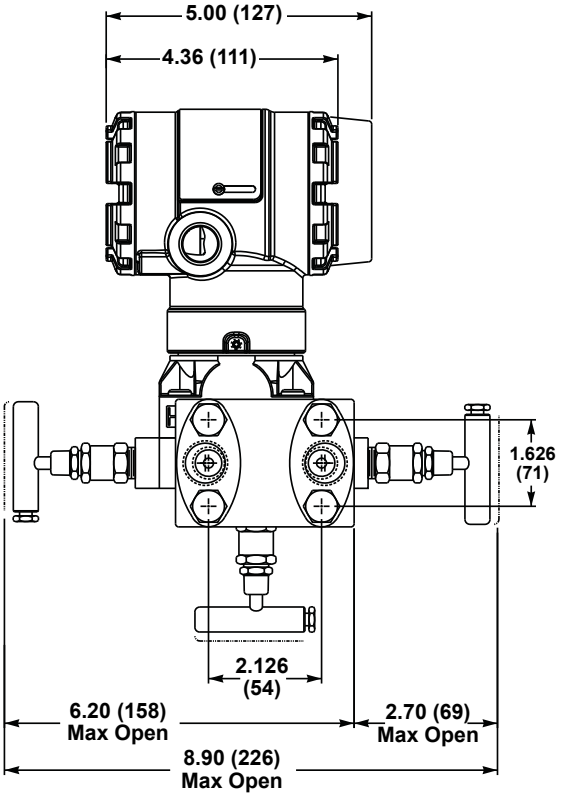
2051C Coplanar with Traditional Flange





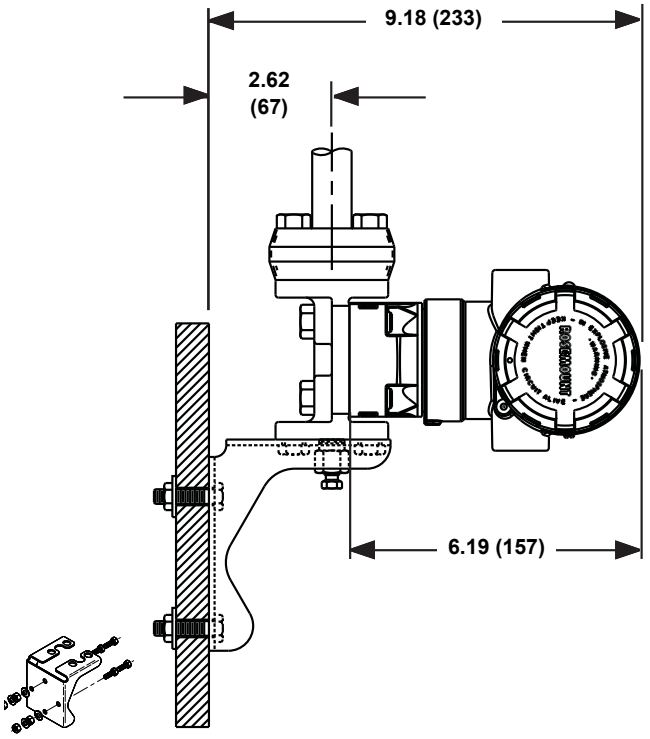
2051C Coplanar with Rosemount 305 Traditional Integral Manifold



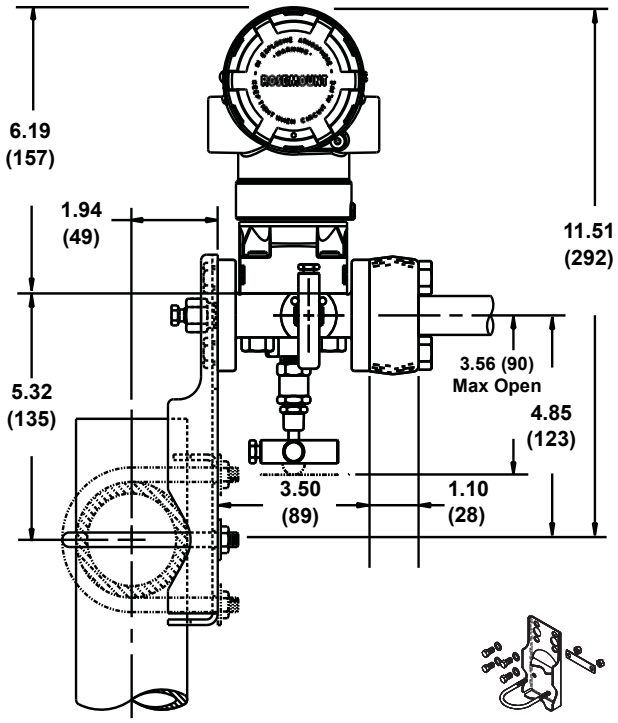


Traditional Flange Mounting Configurations with Optional Brackets for 2-in. Pipe or Panel Mounting

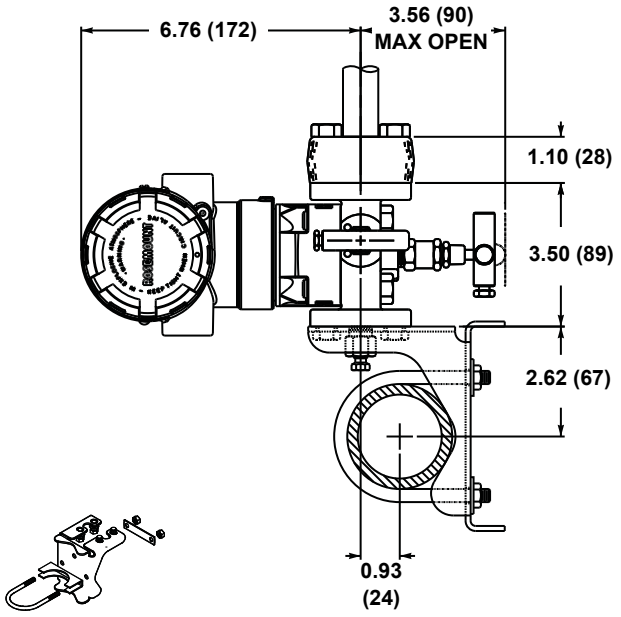
Panel Mount (Bracket Option B2/B8)



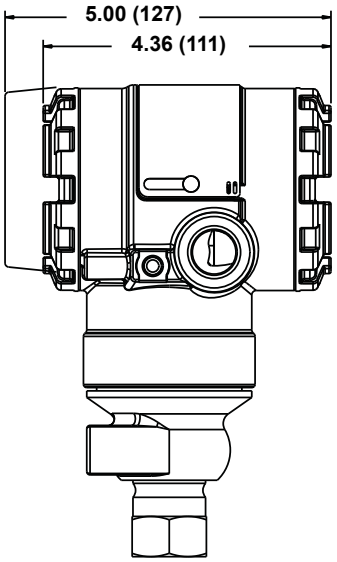
Pipe Mount (Bracket Option B3/B9/BC)

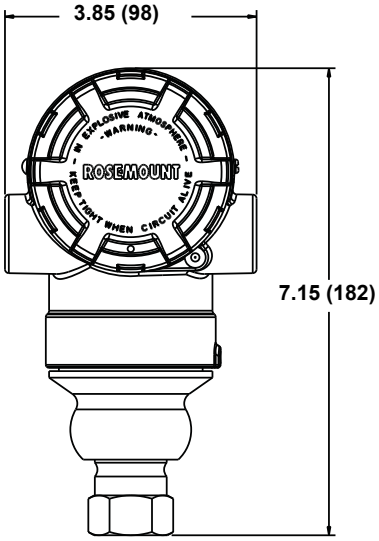


Pipe Mount (Bracket Option B1 / B7 / BA)

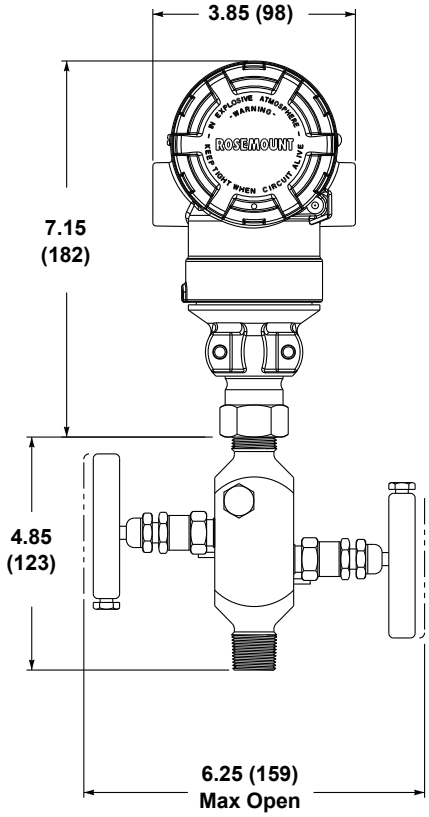


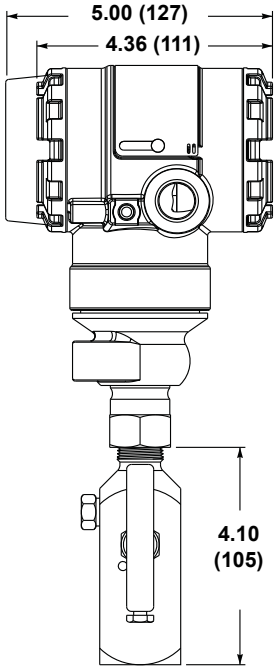
2051T Dimensional Drawings





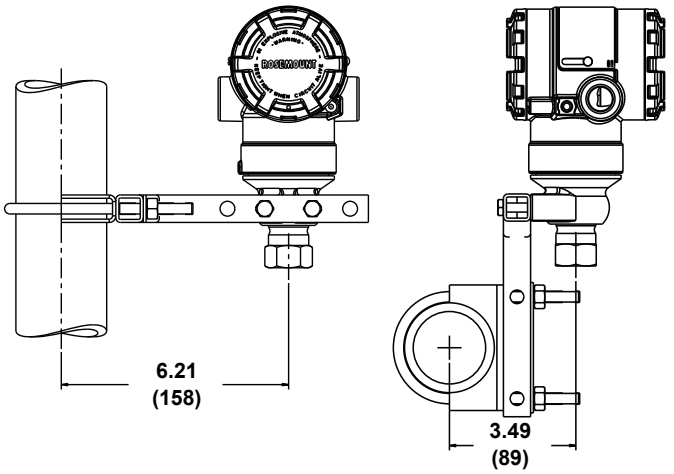
2051T with Rosemount 306 Integral Manifold



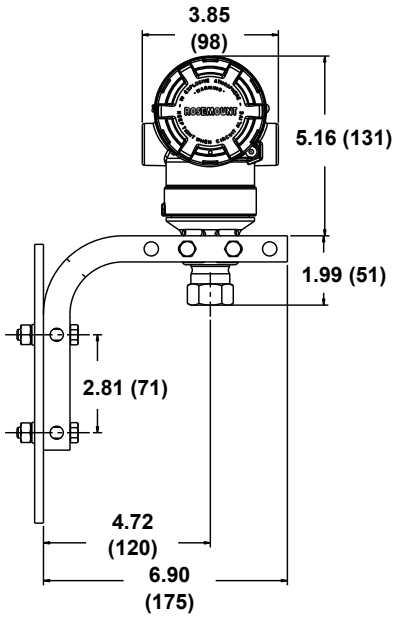


2051T Typical Mounting Configurations with Optional Mounting Bracket

Pipe Mounting

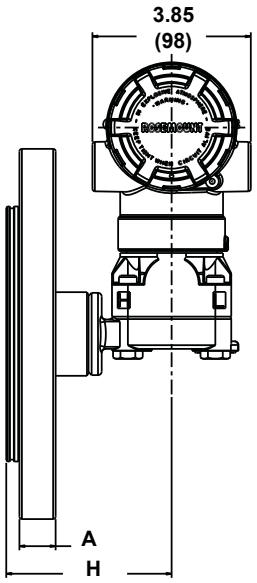


Panel Mounting

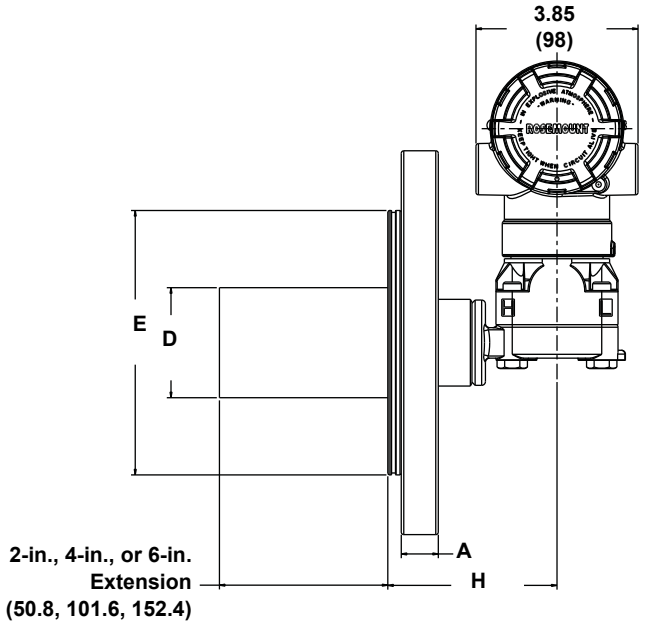


2051L Liquid Level

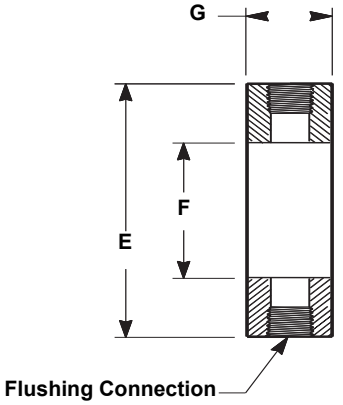
2-in. Flange Configuration (Flush Mount Only)



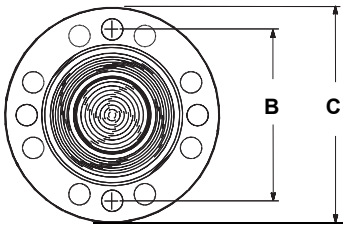
3- and 4-in. Flange Configuration



Optional Flushing Connection Ring (Lower Housing)



Diaphragm Assembly and Mounting Flange



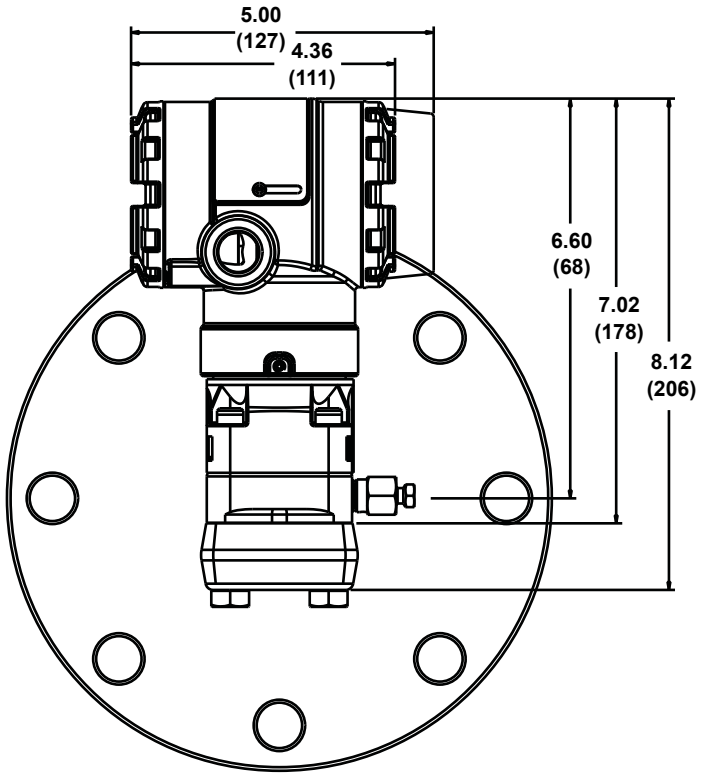


Table 16. 2051L Dimensional Specifications

Except where indicated, dimensions are in inches (millimeters).

Class	Pipe Size	Flange Thickness A	Bolt Circle Diameter B	Outside Diameter C	No. of Bolts	Bolt Hole Diameter	Extension Diameter(1) D	O.D. Gasket Surface E
ASME B16.5 (ANSI) 150	2 (51)	0.69 (18)	4.75 (121)	6.0 (152)	4	0.75 (19)	NA	3.6 (92)
	3 (76)	0.88 (22)	6.0 (152)	7.5 (191)	4	0.75 (19)	2.58 (66)	5.0 (127)
	4 (102)	0.88 (22)	7.5 (191)	9.0 (229)	8	0.75 (19)	3.5 (89)	6.2 (158)
ASME B16.5 (ANSI) 300	2 (51)	0.82 (21)	5.0 (127)	6.5 (165)	8	0.75 (19)	NA	3.6 (92)
	3 (76)	1.06 (27)	6.62 (168)	8.25 (210)	8	0.88 (22)	2.58 (66)	5.0 (127)
	4 (102)	1.19 (30)	7.88 (200)	10.0 (254)	8	0.88 (22)	3.5 (89)	6.2 (158)
DIN 2501 PN 10–40	DN 50	20 mm	125 mm	165 mm	4	18 mm	NA	4.0 (102)
DIN 2501 PN 25/40	DN 80	24 mm	160 mm	200 mm	8	18 mm	66 mm	5.4 (138)
	DN 100	24 mm	190 mm	235 mm	8	22 mm	89 mm	6.2 (158)

Class(1)	Pipe Size	Process Side F	Lower Housing G		H
			1/4 NPT	1/2 NPT	
ASME B16.5 (ANSI) 150	2 (51)	2.12 (54)	0.97 (25)	1.31 (33)	5.65 (143)
	3 (76)	3.6 (91)	0.97 (25)	1.31 (33)	5.65 (143)
	4 (102)	3.6 (91)	0.97 (25)	1.31 (33)	5.65 (143)
ASME B16.5 (ANSI) 300	2 (51)	2.12 (54)	0.97 (25)	1.31 (33)	5.65 (143)
	3 (76)	3.6 (91)	0.97 (25)	1.31 (33)	5.65 (143)
	4 (102)	3.6 (91)	0.97 (25)	1.31 (33)	5.65 (143)
DIN 2501 PN 10–40	DN 50	2.4 (61)	0.97 (25)	1.31 (33)	5.65 (143)
DIN 2501 PN 25/40	DN 80	3.6 (91)	0.97 (25)	1.31 (33)	5.65 (143)
	DN 100	3.6 (91)	0.97 (25)	1.31 (33)	5.65 (143)

(1) Tolerances are -0.020 and +0.040 (-0,51 and +1,02)

Ordering Information

Table 17. Rosemount 2051C Pressure Transmitter Ordering Information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Model	Transmitter Type			
2051C	Pressure Transmitter			
Measurement Type				
Standard				**Standard**
D	Differential			★
G	Gage			★
Pressure Upper Range Limit				
Standard				**Standard**
	2051CD	**2051CG**		
1	25 inH_2O (62,2 mbar)	25 inH_2O (62,2 mbar)		★
2	250 inH_2O (623 mbar)	250 inH_2O (623 mbar)		★
3	1000 inH_2O (2,5 bar)	1000 inH_2O (2,5 bar)		★
4	300 psi (20,7 bar)	300 psi (20,7 bar)		★
5	2000 psi (137,9 bar)	2000 psi (137,9 bar)		★
Transmitter Output				
Standard				**Standard**
A	4–20 mA with Digital Signal Based on HART Protocol			★
F	FOUNDATION fieldbus Protocol			★
Expanded				
M	Low-Power, 1–5 V dc with Digital Signal Based on *HART* Protocol			
Materials of Construction				
	Process Flange Type	**Flange Material**	**Drain/Vent**	
Standard				**Standard**
2	Coplanar	SST	SST	★
3(1)	Coplanar	Cast C-276	Alloy C-276	★
5	Coplanar	Plated CS	SST	★
7(1)	Coplanar	SST	Alloy C-276	★
8(1)	Coplanar	Plated CS	Alloy C-276	★
0	Alternate Process Connection			★
Isolating Diaphragm				
Standard				**Standard**
2(1)	316L SST			★
3(1)	Alloy C-276			★
Expanded				
5(2)	Tantalum			
O-ring				
Standard				**Standard**
A	Glass-filled PTFE			★
B	Graphite-filled PTFE			★
Sensor Fill Fluid				
Standard				**Standard**
1	Silicone			★
2	Inert fill (Halocarbon)			★

Table 17. Rosemount 2051C Pressure Transmitter Ordering Information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Housing Material		**Conduit Entry Size**	
Standard			**Standard**
A	Polyurethane-covered Aluminum	½–14 NPT	★
B	Polyurethane-covered Aluminum	M20 × 1.5 (CM20)	★
J	SST	½–14 NPT	★
K(3)	SST	M20 × 1.5 (CM20)	★
Expanded			
D	Polyurethane-covered Aluminum	G½	
M(3)	SST	G½	

Options (Include with selected model number)

PlantWeb Control Functionality		
Standard		**Standard**
A01	FOUNDATION fieldbus Advanced Control Function Block Suite	★
Alternate Flange(4)		
Standard		**Standard**
H2	Traditional Flange, 316 SST, SST Drain/Vent	★
H3(1)	Traditional Flange, Cast C-276, Alloy C-276 Drain/Vent	★
H7(1)	Traditional Flange, 316 SST, Alloy C-276 Drain/Vent	★
HJ	DIN Compliant Traditional Flange, SST, 7/16 in. Adapter/Manifold Bolting	★
FA	Level Flange, SST, 2 in., ANSI Class 150, Vertical Mount	★
FB	Level Flange, SST, 2 in., ANSI Class 300, Vertical Mount	★
FC	Level Flange, SST, 3 in., ANSI Class 150, Vertical Mount	★
FD	Level Flange, SST, 3 in., ANSI Class 300, Vertical Mount	★
FP	DIN Level Flange, SST, DN 50, PN 40, Vertical Mount	★
FQ	DIN Level Flange, SST, DN 80, PN 40, Vertical Mount	★
Expanded		
HK(5)	DIN Compliant Traditional Flange, SST, 10 mm Adapter/Manifold Bolting	
HL	DIN Compliant Traditional Flange, SST, 12mm Adapter/Manifold Bolting	
Manifold Assembly(4)(6)		
Standard		**Standard**
S5	Assemble to Rosemount 305 Integral Manifold	★
S6	Assemble to Rosemount 304 Manifold or Connection System	★
Integral Mount Primary Element(4)(6)		
Standard		**Standard**
S4(7)	Assemble to Rosemount Primary Element	★
S3	Assemble to Rosemount 405 Primary Element	★

Table 17. Rosemount 2051C Pressure Transmitter Ordering Information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Seal Assemblies[6]		
Standard		**Standard**
S1[8]	Assemble to one Rosemount diaphragm seal	★
S2[9]	Assemble to two Rosemount diaphragm seals	★
Mounting Brackets		
Standard		**Standard**
B1[10]	Traditional Flange Bracket for 2-in. Pipe Mounting, CS Bolts	★
B2[10]	Traditional Flange Bracket for Panel Mounting, CS Bolts	★
B3[10]	Traditional Flange Flat Bracket for 2-in. Pipe Mounting, CS Bolts	★
B4[11]	Coplanar Flange Bracket for 2-in. Pipe or Panel Mounting, all SST	★
B7[10]	B1 Bracket with Series 300 SST Bolts	★
B8[10]	B2 Bracket with Series 300 SST Bolts	★
B9[10]	B3 Bracket with Series 300 SST Bolts	★
BA[10]	SST B1 Bracket with Series 300 SST Bolts	★
BC[10]	SST B3 Bracket with Series 300 SST Bolts	★
Product Certifications		
Standard		**Standard**
E1[3]	ATEX Flameproof	★
E2[3]	INMETRO Flameproof	★
E3[3]	China Flameproof	★
E5	FM Explosion-proof, Dust Ignition-proof	★
E6	CSA Explosion-proof, Dust Ignition-proof, Division 2	★
E7[3]	IECEx Flameproof	★
I1[3]	ATEX Intrinsic Safety	★
I2[3]	INMETRO Intrinsically Safe	★
I3[3]	China Intrinsic Safety	★
I5	FM Intrinsically Safe, Division 2	★
I6	CSA Intrinsically Safe	★
I7[3]	IECEx Intrinsic Safety	★
IA[12]	ATEX FISCO Intrinsic Safety	★
IE[12]	FM FISCO Intrinsically Safe	★
IF[12]	CSA FISCO Intrinsically Safe	★
IG[12]	IECEx FISCO Intrinsically Safe	★
K1[3]	ATEX Flameproof, Intrinsic Safety, Type n, Dust	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
K6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
K7[3]	IECEx Flameproof, Intrinsic Safety, Type n	★
KA[3]	ATEX and CSA Flameproof, Intrinsically Safe, Division 2	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
KC[3]	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2	★
KD[3]	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe	★
N1[3]	ATEX Type n	★
N7[3]	IECEx Type n	★
ND[3]	ATEX Dust	★
Drinking Water Approval		
Standard		**Standard**
DW[13]	NSF Drinking Water Approval	★

Table 17. Rosemount 2051C Pressure Transmitter Ordering Information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Bolting Materials		
Standard		**Standard**
L4	Austenitic 316 SST Bolts	★
L5	ASTM A 193, Grade B7M Bolts	★
L8	ASTM A 193 Class 2, Grade B8M Bolts	★
Display and Interface Options		
Standard		**Standard**
M5	LCD display	★
Special Configuration (Hardware)		
Standard		**Standard**
D4(14)	Zero and Span Hardware Adjustments	★
Flange Adapters		
Standard		**Standard**
DF(15)	1/2-14 NPT Flange Adapters	★
Conduit Plug		
Standard		**Standard**
DO(16)	316 SST Conduit Plug	★
RC1/4 RC1/2 Process Connection		
Expanded		
D9(17)	RC 1/4 Flange with RC 1/2 Flange Adapter - SST	
Ground Screw		
Standard		**Standard**
V5(18)	External Ground Screw Assembly	★
Performance		
Standard		**Standard**
P8(19)	0.065% accuracy and 5 year stability	★
Terminal Blocks		
Standard		**Standard**
T1	Transient Protection Terminal Block	★
Special Configuration (Software)		
Standard		**Standard**
C1(20)	Custom Software Configuration (Requires completed Configuration Data Sheet)	★
Alarm Limit		
Standard		**Standard**
C4(20)(21)	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm High	★
CN(20)(21)	Analog Output Levels Compliant with NAMUR Recommendation NE 43 Alarm Low	★
Pressure Testing		
Expanded		
P1	Hydrostatic testing with certificate	
Cleaning Process Area		
Expanded		
P2(22)	Cleaning for Special Service	
P3(22)	Cleaning for < 1 PPM Chlorine/Flourine	
Maximum Static Line Pressure		
Standard		**Standard**
P9	4500 psig (310 bar) static pressure limit	★

Table 17. Rosemount 2051C Pressure Transmitter Ordering Information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Calibration Certification		
Standard		**Standard**
Q4	Calibration Certificate	★
Material Traceability Certification		
Standard		**Standard**
Q8	Material Traceability Certification per EN 10204 3.1.B	★
Quality Certification for Safety		
Standard		**Standard**
QS(20)	Prior-use certificate of FMEDA data	★
Surface Finish		
Standard		**Standard**
Q16 (23)	Surface finish certification for sanitary remote seals	★
Toolkit Total System Performance Reports		
Standard		**Standard**
QZ(23)	Remote Seal System Performance Calculation Report	★
Typical Model Number: 2051C D 2 A 2 2 A 1 A B4 M5		

(1) Materials of Construction comply with recommendations per NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.

(2) Available in Ranges 2-5 only.

(3) Not available with Low Power output code M.

(4) Requires 0 code in Materials of Construction for Alternate Process Connection.

(5) Not valid with optional code P9 for 4500psi Static Pressure.

(6) "Assemble-to" items are specified separately and require a completed model number.

(7) Process Flange limited to Coplanar (codes 2, 3, 5, 7, 8) or Traditional (H2, H3, H7).

(8) Not valid with optional code D9 for RC1/2 Adaptors.

(9) Not valid with optional codes DF and D9 for Adaptors.

(10) Requires option in the Alternate Process Connection: Flange section.

(11) Requires Coplanar flange.

(12) Only valid with FOUNDATION fieldbus output code F.

(13) Not available with Alloy C-276 isolator (3 code), tantalum isolator (5 code), all cast C-276 flanges, all plated CS flanges, all DIN flanges, all Level flanges, assemble-to manifolds (S5 and S6 codes), assemble-to seals (S1 and S2 codes), assemble-to primary elements (S3 and S4 codes), surface finish certification (Q16 code), and remote seal system report (QZ code).

(14) Not available with FOUNDATION fieldbus output code F.

(15) Not valid with Alternate Process Connection options S3, S4, S5, S6.

(16) Transmitter is shipped with 316 SST conduit plug (uninstalled) in place of standard carbon steel conduit plug

(17) Not available with Alternate Process Connection: DIN Flanges and Level Flanges.

(18) The V5 option is not needed with the T1 option; external ground screw assembly is included with the T1 option.

(19) Available with 4-20 mA HART output code A, FOUNDATION fieldbus output code F, Ranges 2-5, SST diaphragms and silicone fill fluid. If used with the S1 or S2 code, only the improved accuracy of 0.065% applies.

(20) Only available with HART 4-20mA output (output code A).

(21) NAMUR-Compliant operation is pre-set at the factory and cannot be changed to standard operation in the field.

(22) Not required with Alternate Process Connections S5 and S6. Include P2 option in manifold model.

(23) Requires one of the Diaphragm Seal Assemblies codes (S1 or S2).

Table 18. 2051T In-Line Pressure Transmitter Ordering Information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Model	Transmitter Type		
2051T	In-Line Pressure Transmitter		
Pressure Type			
Standard			**Standard**
G	Gage		★
A	Absolute		★
Pressure Upper Range Limit			
Standard			**Standard**
	2051TG	**2051TA**	
1	30 psi (2,1 bar)	30 psi (2,1 bar)	★
2	150 psi (10,3 bar)	150 psi (10,3 bar)	★
3	800 psi (55,2 bar)	800 psi (55,2 bar)	★
4	4000 psi (275,8 bar)	4000 psi (275,8 bar)	★
5	10000 psi (689,5 bar)	10000 psi (689,5 bar)	★
Transmitter Output			
Standard			**Standard**
A	4–20 mA with Digital Signal Based on HART Protocol		★
F	FOUNDATION fieldbus Protocol		★
Expanded			
M	Low-Power, 1–5 V dc with Digital Signal Based on HART Protocol		
Process Connection Style			
Standard			**Standard**
2B	1/2–14 NPT female		★
2C	G1/2 A DIN 16288 male		★
2D	M20 x 1.5 Male (CM20 Male)		★
Expanded			
2F	Coned and Threaded, Compatible with Autoclave Type F-250-C		
Isolating Diaphragm		**Process Connection Wetted Parts Material**	
Standard			**Standard**
2(1)	316L SST	316L SST	★
3(1)	Alloy C-276	Alloy C-276	★
Sensor Fill Fluid			
Standard			**Standard**
1	Silicone		★
2	Inert fill (Fluorinert FC-43)		★
Housing Material		**Conduit Entry Size**	
Standard			**Standard**
A	Polyurethane-covered Aluminum	½–14 NPT	★
B	Polyurethane-covered Aluminum	M20 × 1.5 (CM20)	★
J	SST	½–14 NPT	★
K	SST	M20 × 1.5 (CM20)	★

Table 18. 2051T In-Line Pressure Transmitter Ordering Information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Housing Material		**Conduit Entry Size**	
Expanded			
D	Polyurethane-covered Aluminum	G½	
M	SST	G½	

Options (Include with selected model number)

PlantWeb Control Functionality		
Standard		**Standard**
A01	Advanced Control Function Block Suite	★
Manifold Assemblies		
Standard		**Standard**
S5[2]	Assemble to Rosemount 306 Integral Manifold	★
Seal Assemblies		
Standard		**Standard**
S1[2]	Assemble to one Rosemount seal	★
Mounting Bracket		
Standard		**Standard**
B4	Bracket for 2-in. Pipe or Panel Mounting, All SST	★
Product Certifications		
Standard		**Standard**
E1[3]	ATEX Flameproof	★
E2[3]	INMETRO Flameproof	★
E3[3]	China Flameproof	★
E5	FM Explosion-proof, Dust Ignition-proof	★
E6	CSA Explosion-proof, Dust Ignition-proof, Division 2	★
E7[3]	IECEx Flameproof	★
I1[3]	ATEX Intrinsic Safety	★
I2[3]	INMETRO Intrinsically Safe	★
I3[3]	China Intrinsic Safety	★
I5	FM Intrinsically Safe, Division 2	★
I6	CSA Intrinsically Safe	★
I7[3]	IECEx Intrinsic Safety	★
IA[4]	ATEX FISCO Intrinsic Safety	★
IE[4]	FM FISCO Intrinsically Safe	★
IF[4]	CSA FISCO Intrinsically Safe	★
IG[4]	IECEx FISCO Intrinsically Safe	★
K1[3]	ATEX Flameproof, Intrinsic Safety, Type n, Dust	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
K6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
K7[3]	IECEx Flameproof, Intrinsic Safety, Type n	★
KA[3]	ATEX and CSA Flameproof, Intrinsically Safe, Division 2	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
KC[3]	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2	★
KD[3]	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe	★
N1[3]	ATEX Type n	★
N7[3]	IECEx Type n	★
ND[3]	ATEX Dust	★

Table 18. 2051T In-Line Pressure Transmitter Ordering Information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Drinking Water Approval		
Standard		**Standard**
DW[5]	NSF Drinking Water Approval	★
Digital Display		
Standard		**Standard**
M5	LCD display	★
Special Configuration (Hardware)		
Standard		**Standard**
D4[6]	Zero and Span Hardware Adjustments	★
Conduit Plug		
Standard		**Standard**
DO[7]	316 SST Conduit Plug	★
Ground Screw		
Standard		**Standard**
V5[8]	External Ground Screw Assembly	★
Performance		
Standard		**Standard**
P8[9]	0.065% accuracy and 5 year stability	★
Terminal Blocks		
Standard		**Standard**
T1	Transient Protection Terminal Block	★
Special Configuration (Software)		
Standard		**Standard**
C1[10]	Custom Software Configuration (Requires completed Configuration Data Sheet)	★
Alarm Limits		
Standard		**Standard**
C4[10][11]	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm High	★
CN[10][11]	Analog Output Levels Compliant with NAMUR Recommendation NE 43 Alarm Low	★
Pressure Testing		
Expanded		
P1	Hydrostatic Testing with Certificate	
Cleaning Process Area		
Expanded		
P2[12]	Cleaning for Special Service	
P3[12]	Cleaning for <1 PPM Chlorine/Fluorine	
Calibration Certification		
Standard		**Standard**
Q4	Calibration Certificate	★
Material Traceability Certification		
Standard		**Standard**
Q8	Material Traceability Certification per EN 10204 3.1.B	★
Quality Certifcation for Safety		
Standard		**Standard**
QS[10]	Prior-use certificate of FMEDA data	★

Table 18. 2051T In-Line Pressure Transmitter Ordering Information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Surface Finish		
Standard		**Standard**
Q16[13]	Surface finish certification for sanitary remote seals	★
Toolkit Total System Performance Reports		
Standard		**Standard**
QZ[13]	Remote Seal System Performance Calculation Report	★
Typical Model Number:	**2051T G 3 A 2B 2 1 A B4 M5**	

(1) Materials of Construction comply with recommendations per NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.

(2) "Assemble-to" items are specified separately and require a completed model number.

(3) Not available with Low Power output code M.

(4) Only valid with FOUNDATION fieldbus output code F.

(5) Not available with coned and threaded connection (2F code), assemble-to manifold (S5 code), assemble-to seal (S1 code), surface finish certification (Q16 code), remote seal system report (QZ code).

(6) Not available with FOUNDATION fieldbus output code F.

(7) Transmitter is shipped with 316 SST conduit plug (uninstalled) in place of standard carbon steel conduit plug

(8) The V5 option is not needed with the T1 option; external ground screw assembly is included with the T1 option.

(9) Available with 4-20 mA HART output code A, FOUNDATION fieldbus output code F, Ranges 2-5, SST diaphragms and silicone fill fluid. If used with the S1 or S2 code, only the improved accuracy of 0.065% applies.

(10) Only available with HART 4-20mA output (output code A).

(11) NAMUR-Compliant operation is pre-set at the factory and cannot be changed to standard operation in the field.

(12) Not valid with Alternate Process Connection S5.

(13) Requires S1 Diaphragm Seal Assembly code.

Table 19. Rosemount 2051L Liquid Level Transmitter Ordering Information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Model	**Transmitter Type**			
2051L	Liquid Level Transmitter			
Pressure Range				
Standard				**Standard**
2	–250 to 250 inH_2O (–0,6 to 0,6 bar)			★
3	–1000 to 1000 inH_2O (–2,5 to 2,5 bar)			★
4	–300 to 300 psi (–20,7 to 20,7 bar)			★
Transmitter Output				
Standard				**Standard**
A	4–20 mA with Digital Signal Based on HART Protocol			★
F	FOUNDATION fieldbus Protocol			★
Expanded				
M	Low-Power, 1–5 Vdc with Digital Signal Based on HART Protocol			
Process Connection Size, Diaphragm Material (High Side)				
	Process Connection Size	**Diaphragm**		
Standard				**Standard**
G(1)	2 in./DN 50	316L SST		★
H(1)	2 in./DN 50	Alloy C-276		★
J	2 in./DN 50	Tantalum		★
A(1)	3 in./DN 80	316L SST		★
B(1)	4 in./DN 100	316L SST		★
C(1)	3 in./DN 80	Alloy C-276		★
D(1)	4 in./DN 100	Alloy C-276		★
E	3 in./DN 80	Tantalum		★
F	4 in./DN 100	Tantalum		★
Extension Length (High Side)				
Standard				**Standard**
0	None, Flush Mount			★
2	2 in./50 mm			★
4	4 in./100 mm			★
6	6 in./150 mm			★
Mounting Flange Size, Rating, Material (High Side)				
	Size	**Rating**	**Material**	
Standard				**Standard**
M	2-in.	ANSI/ASME B16.5 Class 150	CS	★
A	3-in.	ANSI/ASME B16.5 Class 150	CS	★
B	4-in.	ANSI/ASME B16.5 Class 150	CS	★
N	2-in.	ANSI/ASME B16.5 Class 300	CS	★
C	3-in.	ANSI/ASME B16.5 Class 300	CS	★
D	4-in.	ANSI/ASME B16.5 Class 300	CS	★
X(1)	2-in.	ANSI/ASME B16.5 Class 150	SST	★
F(1)	3-in.	ANSI/ASME B16.5 Class 150	SST	★
G(1)	4-in.	ANSI/ASME B16.5 Class 150	SST	★
Y(1)	2-in.	ANSI/ASME B16.5 Class 300	SST	★
H(1)	3-in.	ANSI/ASME B16.5 Class 300	SST	★
J(1)	4-in.	ANSI/ASME B16.5 Class 300	SST	★
Q	DN50	PN 10-40 per EN 1092-1	CS	★
R	DN80	PN 40 per EN 1092-1	CS	★
K(1)	DN50	PN 10-40 per EN 1092-1	SST	★
T(1)	DN80	PN 40 per EN 1092-1	SST	★

Table 19. Rosemount 2051L Liquid Level Transmitter Ordering Information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Seal Fill Fluid (High Side)		**Specific Gravity**	**Temperature Limits (Ambient Temperature of 70 °F (21 °C))**	
Standard				**Standard**
A	Syltherm XLT	0.85	-102 to 293 °F (-75 to 145 °C)	★
C	Silicone 704	1.07	32 to 401 °F (0 to 205 °C)	★
D	Silicone 200	0.93	-49 to 401 °F (-45 to 205 °C)	★
H	Inert (Halocarbon)	1.85	-49 to 320 °F (-45 to 160 °C)	★
G	Glycerin and Water	1.13	5 to 203 °F (-15 to 95 °C)	★
N	Neobee M-20	0.92	5 to 401 °F (-15 to 205 °C)	★
P	Propylene Glycol and Water	1.02	5 to 203 °F (-15 to 95 °C)	★

Sensor Module Configuration, Flange Adapter (Low Side)				
	Configuration	**Flange Adapter**		
Standard				**Standard**
1[(1)]	Gage	SST		★
2[(1)]	Differential	SST		★
3[(1)]	Tuned-System Assembly with Remote Seal	None		★

Sensor Module Diaphragm Material, Sensor Fill Fluid (Low Side)				
	Diaphragm Material	**Sensor Fill Fluid**		
Standard				**Standard**
1[(1)]	316L SST	Silicone		★
2[(1)]	Alloy C-276	Silicone		★
7[(1)]	Alloy C-276	Silicone		★
A[(1)]	316L SST	Inert (Halocarbon)		★
B[(1)]	Alloy C-276	Inert (Halocarbon)		★
G[(1)]	Alloy C-276	Inert (Halocarbon)		★

O-ring				
Standard				**Standard**
A	Glass-filled PTFE			★

Housing Material, Conduit Entry Size				
	Housing Material	**Conduit Entry Size**		
Standard				**Standard**
A	Aluminum	½–14 NPT		★
B	Aluminum	M20 × 1.5		★
J	SST	½–14 NPT		★
K	SST	M20 × 1.5		★
Expanded				
D	Aluminum	G½		
M	SST	G½		

Options (Include with selected model number)

PlantWeb Control Functionality		
Standard		**Standard**
A01	FOUNDATION fieldbus Advanced Control Function Block Suite	★

Table 19. Rosemount 2051L Liquid Level Transmitter Ordering Information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Seal Assemblies		
Standard		**Standard**
S1[2]	Assemble to One Rosemount 1199 Seal (Requires 1199M)	★
Product Certifications		
Standard		**Standard**
E1[3]	ATEX Flameproof	★
E2[3]	INMETRO Flameproof	★
E3[3]	China Flameproof	★
E5	FM Explosion-proof, Dust Ignition-proof	★
E6	CSA Explosion-proof, Dust Ignition-proof, Division 2	★
E7[3]	IECEx Flameproof	★
I1[3]	ATEX Intrinsic Safety	★
I2[3]	INMETRO Intrinsically Safe	★
I3[3]	China Intrinsic Safety	★
I5	FM Intrinsically Safe, Division 2	★
I6	CSA Intrinsically Safe	★
I7[3]	IECEx Intrinsic Safety	★
IA[4]	ATEX FISCO Intrinsic Safety	★
IE[4]	FM FISCO Intrinsically Safe	★
IF[4]	CSA FISCO Intrinsically Safe	★
IG[4]	IECEx FISCO Intrinsically Safe	★
K1[3]	ATEX Flameproof, Intrinsic Safety, Type n, Dust	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
K6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
K7[3]	IECEx Flameproof, Intrinsic Safety, Type n	★
KA[3]	ATEX and CSA Flameproof, Intrinsically Safe, Division 2	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
KC[3]	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2	★
KD[3]	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe	★
N1[3]	ATEX Type n	★
N7[3]	IECEx Type n	★
ND[3]	ATEX Dust	★
Digital Display		
Standard		**Standard**
M5	LCD display	★
Hardware Adjustments		
Standard		**Standard**
D4[5]	Zero and Span Hardware Adjustments	★
Flange Adapters		
Standard		**Standard**
DF[6]	1/2-14 NPT Flange Adapters	★
Conduit Plug		
Standard		**Standard**
DO[7]	316 SST Conduit Plug	★
Ground Screw		
Standard		**Standard**
V5[8]	External Ground Screw Assembly	★
Transient Protection		
Standard		**Standard**
T1[9]	Transient Terminal Block	★

Table 19. Rosemount 2051L Liquid Level Transmitter Ordering Information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Software Configuration				
Standard				**Standard**
C1[10]	Custom Software Configuration (Requires completed Configuration Data Sheet)			★
Alarm Limit				
Standard				**Standard**
C4[10][11]	NAMUR alarm and saturation levels, high alarm			★
CN[10][12]	NAMUR alarm and saturation levels, low alarm			★
Calibration Certification				
Standard				**Standard**
Q4	Calibration Certificate			★
Material Traceability Certification				
Standard				**Standard**
Q8	Material Traceability Certification per EN 10204 3.1			★
Quality Certification for Safety				
Standard				**Standard**
QS[10]	Prior-use certificate of FMEDA data			★
Toolkit Total System Performance Reports				
Standard				**Standard**
QZ	Remote Seal System Performance Calculation Report			★
Lower Housing Flushing Connection Ring Material		**Number**	**Size (NPT)**	
Standard				**Standard**
F1	316 SST	1	1/4-18 NPT	★
F2	316 SST	2	1/4-18 NPT	★
F3[12]	Alloy C-276	1	1/4-18 NPT	★
F4[12]	Alloy C-276	2	1/4-18 NPT	★
F7	316 SST	1	1/2-14 NPT	★
F8	316 SST	2	1/2-14 NPT	★
F9	Alloy C-276	1	1/2-14 NPT	★
F0	Alloy C-276	2	1/2-14 NPT	★
Typical Model Number:	**2051L 2 A A0 X D 21 A A B4 M5 F1**			

(1) Materials of Construction comply with metallurgical requirements highlighted within NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.

(2) "Assemble-to" items are specified separately and require a completed model number.

(3) Not available with Low Power output code M.

(4) Only valid with FOUNDATION fieldbus output code F.

(5) Not valid with FOUNDATION fieldbus output code F.

(6) Not available with Remote Mount Seal Assembly option S1.

(7) Transmitter is shipped with 316 SST conduit plug (uninstalled) in place of standard carbon steel conduit plug

(8) The V5 option is not needed with the T1 option; external ground screw assembly is included with the T1 option.

(9) The T1 option is not needed with FISCO Product Certifications; transient protection is included in the FISCO product certification codes IA, IE, IF, and IG.

(10) Only available with HART 4-20 mA output (output code A).

(11) NAMUR-Compliant operation is pre-set at the factory and cannot be changed to standard operation in the field.

(12) Not available with Option Codes A0, B0, and G0.

OPTIONS

Standard Configuration

Unless otherwise specified, transmitter is shipped as follows:

Engineering Units 2051C:	inH_2O (Ranges 1-3), psi (Ranges 4-5)
Engineering Units 2051T:	psi (all ranges)
Engineering Units 2051L:	inH_2O
4 mA (1 V dc)(1):	0 (engineering units)
20 mA (5 V dc)(1):	Upper range limit
Output:	Linear
Flange type:	Specified model code option
Flange material:	Specified model code option
Drain/vent:	Specified model code option
Integral meter:	Installed or none
Alarm(1):	High
Software tag:	(Blank)

(1) Not applicable to fieldbus.

Tagging (3 options available)

- Standard SST hardware tag is permanently affixed on transmitter. Tag character height is 0.125 in. (3,18 mm), 140 characters maximum.
- Tag may be wired to the transmitter nameplate upon request, 85 characters maximum.
- Tag may be stored in transmitter memory (8 characters maximum). Software tag is left blank unless specified.

Commissioning tag (fieldbus only)

A temporary commissioning tag is attached to all transmitters. The tag indicates the device ID and allows an area for writing the location.

Optional Rosemount 304, 305 or 306 Integral Manifolds

Factory assembled to 2051C and 2051T transmitters. Refer to Product Data Sheet (document number 00813-0100-4839 for Rosemount 304 and 00813-0100-4733 for Rosemount 305 and 306) for additional information.

Other Seals

Refer to Product Data Sheet (document number 00813-0100-4016 or 00813-0201-4016) for additional information.

Output Information

Output range points must be the same unit of measure. Available units of measure include:

inH_2O	inH_2O@4 °C(1)	psi	Pa
inHg	ftH_2O	bar	kPa
mmH_2O	mmH_2O@4 °C(1)	mbar	torr
mmHg	g/cm2	kg/cm2	atm

(1) Not available on low power.

Hardware Adjustments

D4 Local zero and span adjustments

- Alarm and security adjustments ship standard

LCD display

M5 Digital Meter

- 2-Line, 5-Digit LCD for 4-20 mA HART and FOUNDATION fieldbus
- 1-Line, 4-Digit LCD for 1-5 Vdc HART Low Power
- Direct reading of digital data for higher accuracy
- Displays user-defined flow, level, volume, or pressure units
- Displays diagnostic messages for local troubleshooting
- 90-degree rotation capability for easy viewing

Transient Protection

T1 Integral Transient Protection Terminal Block

Meets IEEE C62.41, Category Location B

6 kV crest (0.5 μs - 100 kHz)
3 kV crest (8 × 20 microseconds)
6 kV crest (1.2 × 50 microseconds)

Bolts for Flanges and Adapters

- Standard material is plated carbon steel per ASTM A449, Type 1

L4 Austenitic 316 Stainless Steel Bolts
L5 ASTM A 193, Grade B7M Bolts
L8 ASTM A 193 Class 2, Grade B8M Bolts

Conduit Plug

- Single carbon steel plug ships standard, not installed in the transmitter

DO 316 SST Conduit Plug

- Single 316 SST conduit plug replaces carbon steel plug

Rosemount 2051C Coplanar Flange and 2051T Bracket Option

B4 Bracket for 2-in. Pipe or Panel Mounting

- For use with the standard Coplanar flange configuration
- Bracket for mounting of transmitter on 2-in. pipe or panel
- Stainless steel construction with stainless steel bolts

Rosemount 2051C Traditional Flange Bracket Options

B1 Bracket for 2-in. Pipe Mounting

- For use with the traditional flange option
- Bracket for mounting on 2-in. pipe
- Carbon steel construction with carbon steel bolts
- Coated with polyurethane paint

B2 Bracket for Panel Mounting

- For use with the traditional flange option
- Bracket for mounting transmitter on wall or panel
- Carbon steel construction with carbon steel bolts
- Coated with polyurethane paint

B3 Flat Bracket for 2-in. Pipe Mounting

- For use with the traditional flange option
- Bracket for vertical mounting of transmitter on 2-in. pipe
- Carbon steel construction with carbon steel bolts
- Coated with polyurethane paint

B7 B1 Bracket with SST Bolts

- Same bracket as the B1 option with Series 300 stainless steel bolts

B8 B2 Bracket with SST Bolts

- Same bracket as the B2 option with Series 300 stainless steel bolts

B9 B3 Bracket with SST Bolts

- Same bracket as the B3 option with Series 300 stainless steel bolts

BA Stainless Steel B1 Bracket with SST Bolts

- B1 bracket in stainless steel with Series 300 stainless steel bolts

BC Stainless Steel B3 Bracket with SST Bolts

- B3 bracket in stainless steel with Series 300 stainless steel bolts

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